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Edward Kasner: "Catenaries in an arbitrary field of force."

W. B. Carver: "Degenerate pencils of quadrics connected with $\Gamma_{n+4, n}^{n+2}$ configurations."

C. F. Craig: "On a class of hyperfuchsian functions."

Virgil Snyder: "Surfaces and congruences derived from the cubic variety having a double line in four-dimensional space."

W. B. Ford: "Irreducible homogeneous linear groups in an arbitrary infinite field."

Arthur Ranum: "On certain solids in riemannian space."

Arthur Ranum: "On the rank of a matrix."

H. B. Phillips: "Polygons on a quadric surface."

J. G. Hardy: "Note on a theorem of Pirondini concerning four-dimensional curves."

E. B. Coble: "Combinants of binary forms."

The twenty-fourth regular meeting of the Chicago Section was held at the University of Chicago on Friday and Saturday, January 1-2. The next meeting of the society falls on Saturday, February 27, at Columbia University. The San Francisco Section will meet on the same day at Stanford University. The sixteenth summer meeting and sixth colloquium will be held at Princeton University during the entire week September 13-18. The first two days will be devoted to the regular sessions for the presentation of papers. At the colloquium, which will open on Wednesday morning, the following special courses of lectures will be given: Professor G. A. Bliss, "Existence theorems in analysis"; Professor J. H. Jeans, "Statistical mechanics"; Professor Edward Kasner, "Geometric aspects of dynamics."

F. N. COLE,
Secretary

SOCIETIES AND ACADEMIES

THE INDIANA ACADEMY OF SCIENCE

THE annual meeting of the Indiana Academy of Science pursuant to the new plan of holding meetings at the various institutions of learning in the state, was held at Purdue University on November 26-28. A large representation of the educators of the state was present and many papers were read that were of interest and importance. Thirty-five names were added to the roll of the membership, and a number of men who once were residents of the state and active members of the academy were elected to non-resident membership. The retiring president, Professor Glenn Culbertson, of Hanover College, delivered

an address on the subject "Deforestation and its Effects among the Hills of Southern Indiana." Significant among the papers read was the number bearing on practical scientific problems. Following is the program in full.

General

"Work of the Pathological Laboratory of the Central Indiana Hospital for the Insane," Dr. Geo. F. Edenharter.

"New Species of Birds in Indiana," Amos Butler.

"The Recent International Congress on Tuberculosis," Severance Burrage.

"Biography and the Influence of Environment," Robert Hessler.

"Folkner Island, Waber Lake, Kosciusko County, Indiana," J. P. Dolan.

"A Strange Nurse," A. J. Bigney.

Drawing of the Indians at "Shaker" (made by an Indian in the Indian School), presented by Albert B. Reagan.

"Invasion of a School Building by Bed-bugs, *Acanthia hirsutinis*, parasites on Chimney Swifts," H. E. Enders.

"Photographs of Morehouse's Comet, 19081" (lantern), W. A. Cogshall.

"Selective Fertilization among Fishes," W. J. Moenkhaus.

"Nature Study," J. G. Coulter.

Botany

"Field Observations on Rusts for the General Botanist," J. C. Arthur.

"The Rust of Timothy," F. D. Kern.

"Notes on the Heterocercous Rusts of Indiana," Aaron G. Johnson.

"Some Anomalies in the Endosperm of *Pinus*," D. M. Mottier.

"Notes on the Seedless Persimmon," Wm. L. Woodburn.

"A Preliminary List of the Fungi of Indiana," J. M. Van Hook.

"Testing Seed Corn by Specific Gravity," H. A. Dunn.

"Notes on the Flora of Cass County, Indiana," Robert Hessler.

"Bean Anthracnose," M. F. Barrus.

"Endophytic Algæ," Jacob Schramm.

"Report of Work in Corn Pollination," M. L. Fisher.

"Effect of the Recent Drought upon Forest Trees," Stanley Coulter.

"Difference between *Pinus taeda* and *Pinus palustris*," Katherine G. Bitting.

"A Forest Problem," W. H. Freeman.

"Botany in the High School," E. C. Snarr.

"The Killing of Mustard and other Noxious Weeds in the Grain Fields of Dakota," E. W. Olive.

"The Plankton of an Underground Stream," Will Scott.

"Anthracnose on Cereals and Grasses," A. D. Selby and T. F. Manns.

Chemistry, Physics and Mathematics

"The Meyer Molecular Weight Calculation," Percy N. Evans.

"The Vapor Pressure Method of Determining Molecular Weights," J. B. Garner.

"Reaction of Sulphuric Acid Interpreted upon the Basis of the Electrolytic Dissociation Theory," W. A. Ruth.

"Action of Alpha Bromacylesters on Sodium Acetylacetone," G. A. Reddick.

"Action of Alpha Bromacylesters on Sodium Benzoylacetone," J. B. Garner and G. J. Fink.

"Relation of Fats to Moisture Content of Butter," O. F. Hunziker.

"Note on a Class of Definitions," F. R. Higgins.

"A Graphical Representation of the Epsilon-Delta Definition of the Limit of a Function and Continuity," F. R. Higgins.

"The Beckmann Rearrangement," J. B. Garner.

"A Contribution to the Chemistry of Mucoid," C. E. May.

"Determination of Lead by Titration of Lead Chromate," C. E. Brooks.

"An Evolution Method for the Determination of Sulphur in Sulphates and Sulphides," F. C. Mathers.

"The Deterioration of Platinum through Ignition of Phosphates," R. E. Lyons.

"The Use of the Polariscopes in Testing High Tension Insulators," C. F. Harding.

Geology

"Probable Origin of Depressions in the Mesa South of the Tijeras Canyon, New Mexico," Albert B. Reagan.

"Headwaters of the Tippecanoe River," J. T. Scovell.

"Origin of Cyclones and Anticyclones of Temperate Latitudes," W. A. McBeth.

"Some Drainage Modifications in Southern Indiana," W. M. Tucker.

"Soil Survey of Davies County," L. C. Snyder.

"Caves and Cave Formation of the Mitchell Limestone of Indiana," F. C. Greene.

Zoology

"The Nasal Muscles of the Reptiles," H. L. Bruner.

"Swell Mechanisms of Vertebrates," H. L. Bruner.

"Life Zones of Indiana as Illustrated by the Distribution of Orthoptera and Coleoptera within the State," W. S. Blatchley.

"Animals of the Olympic Peninsula, Washington," Albert B. Reagan.

"The Effect of Successive Removal on the Rate of Regeneration," Charles Zeleny.

"Proportional Regeneration," M. M. Ellis.

"Curves Representing the Rate of Regeneration," M. L. Durbin.

"Evidences for the Circulation of a Mixed Blood in the Adult Reptile and Amphibian as well as in the Fetal Mammal and Bird," A. G. Pohlman.

The following were elected officers for the ensuing year:

President—A. L. Foley, State University.

Vice-president—P. N. Evans, Purdue.

Secretary—J. H. Ransom, Purdue.

Assistant Secretary—A. J. Bigney, Moore's Hill College.

Press Secretary—G. A. Abbott, Indianapolis Manual Training School.

Treasurer—W. A. McBeth, State Normal.

Editor—H. L. Bruner, Butler College.

J. H. RANSOM,

Secretary

THE PHILOSOPHICAL SOCIETY OF WASHINGTON

THE 656th meeting was held on December 5, 1908, Vice-president Wead in the chair. The evening was devoted to hearing the president's annual address, delivered by Dr. L. A. Bauer, who spoke of "The Instruments and Methods of Research."

The full text of this address will soon be published in volume XV. of the Bulletins of the Philosophical Society of Washington.

THE 38th annual meeting was held December 19, 1908, President Bauer in the chair.

The following officers were duly elected for the ensuing year:

President—Simon Newcomb.

Treasurer—Bernard R. Green.

Secretaries—G. K. Burgess and R. L. Faris.

General Committee—W. A. DeCaindry, R. A. Harris, E. Buckingham, E. G. Fischer, L. A. Fischer, L. J. Briggs, P. G. Nutting, W. S. Eichelberger, F. A. Wolff.

R. L. FARIS,

Secretary

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 449th meeting was held November 28, 1908, with President Stejneger in the chair. Mr. H. W. Clark noted the occurrence of maple seeds gathered into clumps and partly buried in the ground under the trees, without apparent reason. Dr. L. O. Howard cited a new problem in the distribution of the gypsy moth. Distribution has been supposed to be only by caterpillars dropped upon and carried by moving objects, as carriages and the like. Isolated colonies of the moth have now been found in the woods far from roads or paths. The moths can not fly and it is yet unknown how the dissemination was accomplished. Information or suggestions were requested, the point being of much practical importance. The part which birds or heavy winds may play is problematical.

The regular program consisted of an address by Dr. F. Creighton Wellman on the "General Biological Conditions in Angola, Portuguese West Africa." The speaker occupied an hour with an interesting account of general conditions, citing freely from his notes, which were especially rich on the botanical side, on species of both flora and fauna in many groups.

THE 450th meeting was held December 12, 1908, in George Washington University Hall, with President Stejneger in the chair. The program consisted of an illustrated lecture by Mr. Ernest T. Seton, entitled "Two Thousand Miles by Canoe to the Arctic Region."

The 451st meeting, being the 29th annual meeting for the election of officers, was held December 26, 1908, with President Stejneger in the chair. The following were elected for the ensuing year:

President—T. S. Palmer.

Vice-presidents—E. L. Greene, E. W. Nelson, W. P. Hay, J. N. Rose.

Recording Secretary—M. C. Marsh.

Corresponding Secretary—W. H. Osgood.

Treasurer—J. W. Gidley.

Councilors—A. D. Hopkins, A. K. Fisher, A. B. Baker, David White, Vernon Bailey.

M. C. MARSH,
Recording Secretary

SECTION OF GEOLOGY AND MINERALOGY OF THE
NEW YORK ACADEMY OF SCIENCES

At the regular monthly meeting of the section on November 2, the evening was given to the presentation and discussion of a paper entitled "A Contribution to the History of Mt. Pelé, Martinique," by Dr. Edmund Otis Hovey.

The author described, with the aid of many

lantern slides, the conditions on and near Mt. Pelé during his visits in May–July, 1902, February–April, 1903, and April–May, 1908, and illustrated particularly the devastation wrought by the early eruptions, the disposition and distribution of material thrown out by the volcano, the building up of the spine of 1902–3 and its subsequent destruction, the advance of erosion since the cessation of eruptions and the restoration of vegetation in St. Pierre and upon the flanks of the mountain. The paper also described the area of fumaroles in the valley of the Rivière Claire and gave the arguments for the probability of these being true fumaroles. Temperature observations were made also in the great fissures of the new cone, where, by means of an electric pyrometer, temperatures as high as 515° C. (959° F.) were obtained.

The paper will be published in full in the *Bulletin of the American Geographical Society*.

CHARLES P. BERKEY,
Secretary of Section

THE AMERICAN CHEMICAL SOCIETY
NEW YORK SECTION

THE third regular meeting of the session of 1908–9 was held at the Chemists' Club on December 11.

Messrs. H. S. Miner and M. C. Whitaker presented a paper on "The Rare Earths—their Production and Application." Mr. Miner spoke of the sources of the so-called rare earths, described the forms in which they occurred and the methods of mining and purifying them. He then gave a résumé of the development of incandescent gas lighting, describing the researches of the early workers on the subject and indicating many problems yet to be solved. Mr. Miner illustrated his subject by a splendid collection of raw and purified materials used in making Welsbach mantles. Mr. Whitaker described the manufacturing processes and different forms of mantles used in this country and abroad. He showed numerous lantern slides to illustrate the structure of the mantles and the machinery used in making them.

The other titles for the evening were as follows: "A Volumetric Method for the Determination of Barium," A. E. Hill and W. A. H. Zink; "The Ultra-microscope and some of its Revelations," Jerome Alexander; "The Potential of Iron Calculated from Equilibria Measurements," A. B. Lamb.

C. M. JOYCE,
Secretary